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Multi-Cure® 984-LVF Conformal Coating

Multi-Cure 984-LVF is a single-component, 100% solids, conformal coating specifically formulated for rapid room temperature cure when exposed to longwave (320-380 nanometer) UV light. Thin layer coatings cure almost instantly to a depth of 7 mils and fluoresce upon exposure to black light. Multi-Cure 984-LVF also exhibits excellent adhesion to a variety of metal, ceramic, and glass-filled epoxy surfaces. 984-LVF is a moderately low viscosity coating which can be cured by exposure to UV light and secondarily with heat for shadowed areas on densely populated circuit boards This product is in full compliance with RoHS directives 2015/863/EU.
984-LVF is UL recognized (UL 746C/94), rated indoor/outdoor at 120°C.

Multi-Cure 984-LVF is approved to Military Specification MIL-I-46058-C, Type AR, ER, and UR (QPL#576-90). 984-LVF meets "NSA" hydrolytic stability (reversion) requirements.

TYPICAL UNCURED PROPERTIES

Solvent Content	None	
Appearance	Single Component/Colorless Fluorescing Liquid	
Specific Gravity	1.05	
Viscosity	150 cP (nominal)	ASTM D-1384

TYPICAL CURED PROPERTIES

PHYSICAL

Durometer Hardness	D80	ASTM D-224
Tensile at Break	6,000 psi	ASTM D-638
Elongation at Break	5%	ASTM D-638
Modulus of Elasticity	60,000 psi	ASTM D-638
Water Absorption	0.4%	ASTM D-570
Cross Hatch Adhesion Test:	Copper 100%	ASTM D-3359
	G-10 100%	ASTM D-3359

THERMAL

Thermal Limit (brittle/degrades)	-55° to 175°C (-65° to 350°F)	DSTM* D-200
Coefficient of Linear Thermal Expansion	69 x 10^{-6} in/in/°C	ASTM E-831

ELECTRICAL

Dielectric Strength	1,800 V/mil	ASTM D-1304
Volume Resistivity	35.8 x 10^{12} ohm-cm	ASTM D-1304
Surface Resistivity	384 x 10^{12} ohm	ASTM D-1304
Dissipation Factor, 1 MHz	0.03	ASTM D-1304
Dielectric Constant, 1 MHz	3.4	ASTM D-1304

*DSTM refers to Dymax Standard Test Method

RoHS Compliant

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CURE SCHEDULE - UV Cure with 365 nm UV light [1]:

Cure Time (seconds)	Intensity mW/cm^2	Dymax Light-Welder® Lamp
30	250	5000-EC
1	2,500	UVC-6 with F-450

Multi-Cure 984-LVF is designed with optimum level of fluorescent indicator to allow cure and to fluoresce under a black light. Though UV conformal coatings do not fluoresce as brightly as traditional solvent based coatings, the following steps should permit adequate brightness for easy inspection:

1. Avoid overcuring the conformal coating. The UV cure schedule listed above is adequate. Lengthening exposure to UV light lowers fluorescence.
2. Inspect coated boards under black light in a shrouded area. Indirect indoor lighting decreases the effect of the black light in revealing the fluorescence.

Heat Cure Following UV Exposure

Heat can be used as a secondary cure mechanism where all adhesive cannot be cured with UV light. UV cure must be done prior to heat cure. Application may involve dip, spray, or curtain coat. The following cure schedule may be used:

110°C	225°F	1 hour
120°C	250°F	30 minutes
150°C	300°F	15 minutes

FACTORS AFFECTING CURING

- Dark surfaces lengthen cure time. Thicker films require longer cure times.
- Full range (UV-A, B & C) lamps provide faster cures than filtered sources.
- All UV sources degrade with use. Check output periodically with a radiometer.
- Light intensity decreases as distance from UV source increases.

HANDLING AND DISPENSING ADHESIVE

Typically, Dymax 984-LVF is sprayed. For questions relating to dispensing, curing systems, or the use of Dymax products, contact Dymax Application Engineering.

Repeated or continuous skin contact may cause sensitization and should be avoided. Do not wear jewelry. The use of barrier hand cream is recommended. Do not wear absorbent gloves. Adhesive may be removed with hand soap and water. Avoid eye contact. See CAUTION below. Wipe excess adhesive with paper towels; remove residue with chlorinated solvents, freon, methanol, ethanol, or isopropanol.

STORAGE AND SHELF LIFE

Store the material in a cool, dark place when not in use. Do not expose to light. This product may polymerize upon prolonged exposure to ambient and artificial light. Keep covered when not in use. This material has an 18-month shelf life from date of manufacture, unless otherwise specified, when stored between 10°C (50°F) and 35°C (90°F) in the original, unopened container. Dymax product 984-LVF does not support fungal or bacterial growth.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of contact, immediately flush with water for at least 15 minutes; for eyes, get medical attention. Wash clothing before reuse. Keep out of reach of children. Do not take internally. If swallowed, vomiting should be induced at once and a physician called. For specific information, refer to the product's Material Safety Data Sheet before use.

GENERAL INFORMATION

This product is intended for industrial use only. Keep out of the reach of children. Avoid breathing vapors. Avoid contact with skin, eyes, and clothing. Wear impervious gloves. Repeated or continuous skin contact with uncured material may cause irritation. Remove material from skin with soap and water. Never use organic solvents to remove material from skin and eyes. For more information on the safe handling of this material, please refer to the Safety Data Sheet before use.

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